DWR
CCTAG
Working Meeting

December 12, 2014

California Department of Water Resources
Climate Change Technical Advisory Working Meeting
December 12, 2014
9:30 am-12:00 pm
DWR Creekside Conf Room, 2nd floor, Bonderson

https://resources.webex.com/resources/j.php?ED=229264172&UID=491358787&RT=MiM0

Provide your phone number when you join the meeting to receive a call back. Alternatively, you can call:
Call-in toll-free number (Verizon): 1-877-923-1522 (US)
Host access code: 679 474 0, Attendee access code: 295 056 7

AGENDA:

Report Title and Cover Page details (EL)
Chapter 1: (AS) and 4th Assessment Text (GF)
Chapter 2: (Dan C)
Chapter 3: (MA)
Chapter 4: (MD)
Chapter 5: DWR Applications (SY)
- **5 projects (AS)**
- **Additional Guidance DWR would like (Chapter 5?)**
  - Emissions scenarios (RCP) recommendations (AS)
  - No Name Oscillation caution (MA)
  - Decision Scaling Approach (AS)

Chapter 6: Guidance (AH, JG* addition, ALL)
Executive Summary (Dave C)
Set Final Chapters due date
Editing Process (EL)
Call-in Meetings January 16th and February 20th
Final Paper Release and CCTAG in-person wrap meeting; March, 2015

10/14/14 **CCTAG Recommendations to DWR**	**Lead/** Team	
Chapter		
Executive Summary	TBD	
1) Introduction	**Lead: Schwarz**, Young, Kosta, Holly, Guido, Al H., Dan, Mike D., Mike A.	
2) Model Selection	**Lead: Dan C**	
3) Stress Test/ Extreme Scenario Development	**Lead: M Anderson,** Curtis, R Langridge, J Gyakum, K Redmond, M Dettinger (Schwarz, Juricich, DWR)	
4) Downscaling	**Lead: Dettinger, L Kavvas,** Guido, Schwarz, Jamie A.	
5) Guidance for DWR Applications	**Lead: Sarah,** Mike D., Kosta, Ruth, Al H., Holly	
6) Recommendations for future work *(draft title)*	**Lead: Al H.**, Kosta, Sarah, Mike D. Lev, Holly.	

DEPARTMENT OF WATER RESOURCES

Climate Change Technical Advisory Group Perspectives and Guidance for Climate Change Analysis

Memorandum Report to
California Department of Water Resources

By
CA-DWR Climate Change Technical Advisory Group

12/4/2014

For Discussion Only

Chapter 1. California 4th Assessment Linkage

Linkages to Other Related Activities Being Performed by State Agencies

From the beginning, state support for climate change science has been designed to complement and enhance research funded by the federal government. An example of an early federal effort is the creation of the California Application Program (CAP) at the Scripps Institution of Oceanography, University of California San Diego by the National Oceanic Atmospheric Administration (NOAA) in the late 1990s. The CAP program has focused on climate variability and climate change impacts on water resources, wildfire, and human health. In 2001 the US Global Change Research Program published the first national assessment report (NAST 2001).

In the last few years, the federal government has established regional climate change research centers similar to the CAP program created by NOAA at Scripps Institution of Oceanography. Notable among them are the regional Climate Science Centers (CSCs) established by the Department of the Interior (DOI) to develop tools and information to inform science-based climate change adaptation planning for natural resources, primarily at the landscape-level. Research priorities of the CSCs are partially informed by the Landscape Conservation Cooperatives (LCCs), also established by the DOI to facilitate communication and coordination among partners. The LCCs are governed by steering committees comprised of federal and state agency representatives, non-governmental organizations, tribal entities, and more depending on the individual LCC. These LCC's have also funded research projects related to identifying climate risks and creating options for responding. Four LCCs include areas within California. The U.S. Department of Agriculture (USDA) is establishing Regional Climate Hubs to deliver science-based knowledge and practical information to farmers, ranchers, and forest landowners to support decision-making related to climate change. A subsidiary Hub at the University of California Davis will focus its research on specialty crops and Southwest forests.

Could this section tie the recommendations report more closely to these activities? Specifically, I'm thinking about a statement that the 4th assessment report will adopt (or could adopt, if it's too soon to make a definitive statement) the scenarios detailed in Chapter 2 of the report and that the information on downscaling also will/is informing decisions on the 4th assessment. The idea being to broaden the reach of the recommendations and to show that, although they were specifically formulated for DWR, there is a lot here that can be helpful for others. ….

Chapter 5. DWR Applications Guidance

Study No. 1 California Water Plan	Statewide general water plan, high level, broad, not directly connected to any specific decision. Designed to inform the legislature, the public, and local/regional water planning and management agencies on the strategic direction of statewide water management.	Most General
Study No. 2 and 3 State Water Project and Central Valley Project Climate Change Impact Reports (2006 and 2009)	Climate change specific analysis of SWP and CVP performance under scenarios of climate change. This study is not connected to any specific decision. Designed to explore potential impacts and lose of SWP/CVP performance as a result of climate change and to inform DWR management, the legislature, and the public about such possibilities.	
Study No. 4 State Water Project Delivery Reliability Report	Biannual report generated by DWR to provide information about the expected future reliability of State Water Project deliveries. This report projects out 20 years into the future and provides information that is used by State Water Contractors. This report provides fairly specific information given assumptions about future conditions. State Water Contractors may use this information to inform their decision making about their future water supplies and projects.	
Study No. 5 Status Report On Preliminary Operations Simulations	General planning study to investigate the efficacy of various potential approaches to water management challenges. This study was used to inform DWR and Governor's office decision makers about what types of future projects or programs would be most likely to improve water supply reliability in the face of various challenges including climate change. This study can be closely linked to strategic direction, funding and other executive decisions.	
Study No. 10 Bay Delta Conservation Plan	This Plan documents the analysis done to investigate the efficacy and negative impacts of a potential infrastructure project. Climate change analysis is just one of many areas of analysis. The Plan provides very specific details about current and future conditions and very specific details about the specific project being proposed. The analysis in this Plan can be directly linked to decision making about whether the project goes forward or does not.	Most Specific/Detailed

Type 1: General Planning Studies

- Very General (Policy level, strategic direction)
- Long-time horizon (30-100 years)
- Large spatial coverage (statewide/Central Valley water systems)
- Not specific to climate change or climate change impacts
- Ability to explore multiple projections may vary

High level, broad, ***not directly connected to any specific decision***. Designed to inform the legislature, the public, and/or local/regional water planning and management agencies on the strategic direction of statewide water management.

Example: California Water Plan (Updated every 5 years)

Type 2: Climate Change Specific General Planning Studies

- Very General (Policy level, strategic direction)
- Long-time horizon (30-100 years)
- Large spatial coverage (statewide/Central Valley water systems)
- Specifically designed to estimate or disclose climate change impacts
- Broad ability to explore multiple climate projections

High level, broad, ***not directly connected to any specific decision***. Designed to explore potential impacts of climate change and inform the legislature, the public, and/or local/regional water planning and management agencies about climate change risks.

Example: 2006 and 2009 State Water Project and Central Valley Project Climate Change Impact Reports

Type 3: Specific Operations Reports

- Very specific to operations (disclosure, informative)
- Mid range time horizon (20-40 years)
- Large spatial coverage (State Water Project Service Area)
- Specifically designed to estimate or disclose performance of SWP and project future reliability
- Ability to explore multiple climate projections historically limited

Planning level, ***used by local and regional water users***. Designed to inform SWP contractors about the reliability of their SWP allocations.

Example: State Water Project Delivery Reliability Reports (Updated biannually)

Type 4: Operations Investigation Reports

- Investigations into potential operational changes or new infrastructure investments (investigative, may result in policy changes or new directions)
- Mid to long range time horizon (20-80 years)
- Large spatial coverage (Statewide or SWP Service Area)
- Specifically designed to test future vulnerabilities and potential strategies to improve future reliability
- Ability to explore multiple climate projections may vary

Planning level, ***used by DWR/Leg./GO to investigate the efficacy of various potential approaches to water management challenges.*** *Closely linked to strategic direction, funding and other executive decisions.*

Example: Status Report On Preliminary Operations Simulations

Type 5: Specific Project Analyses

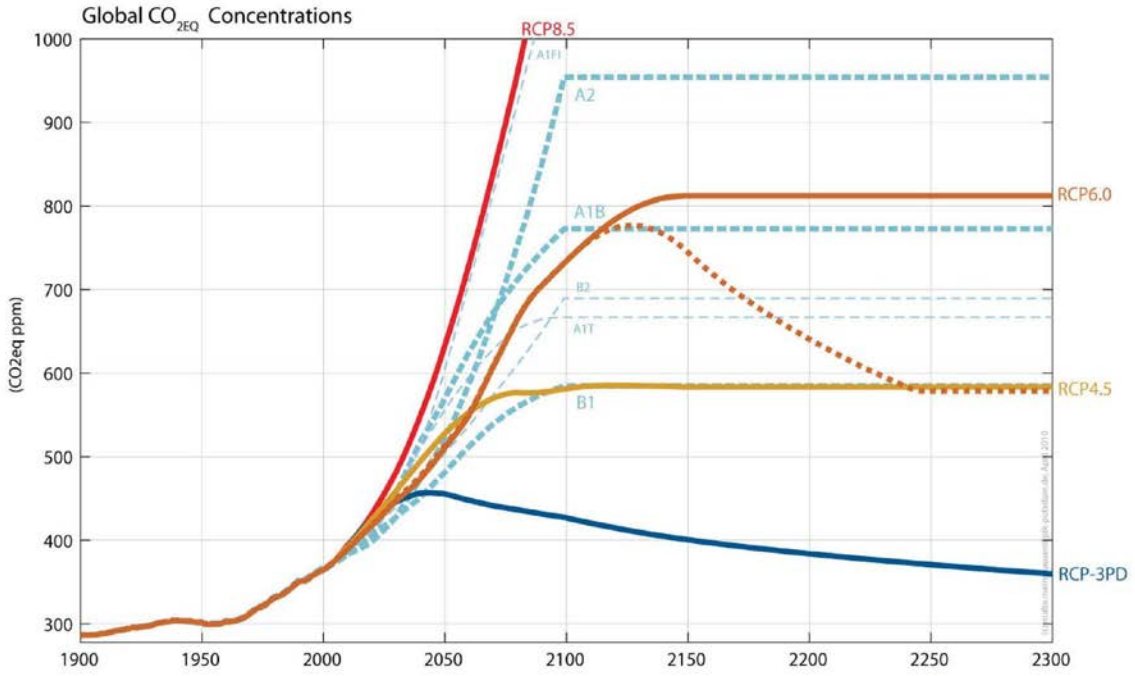
- CEQA, NEPA, FERC Relicensing, Feasibility Assessment of specific proposed projects
- Mid range time horizon (20-60 years)
- Spatial coverage varies from localized to very large
- Directly related to decision making
- Ability to explore multiple climate projections is **very limited**
- **Climate Change is one of many areas of very specific analysis**

Implementation level, ***used by DWR to explore and disclose potential impacts and benefits of specific proposed projects.***

Example: Bay Delta Conservation Plan

Addition Chapter 5 Guidance: *Emissions Scenarios*

CO_2-eq Concentrations for the RCPs

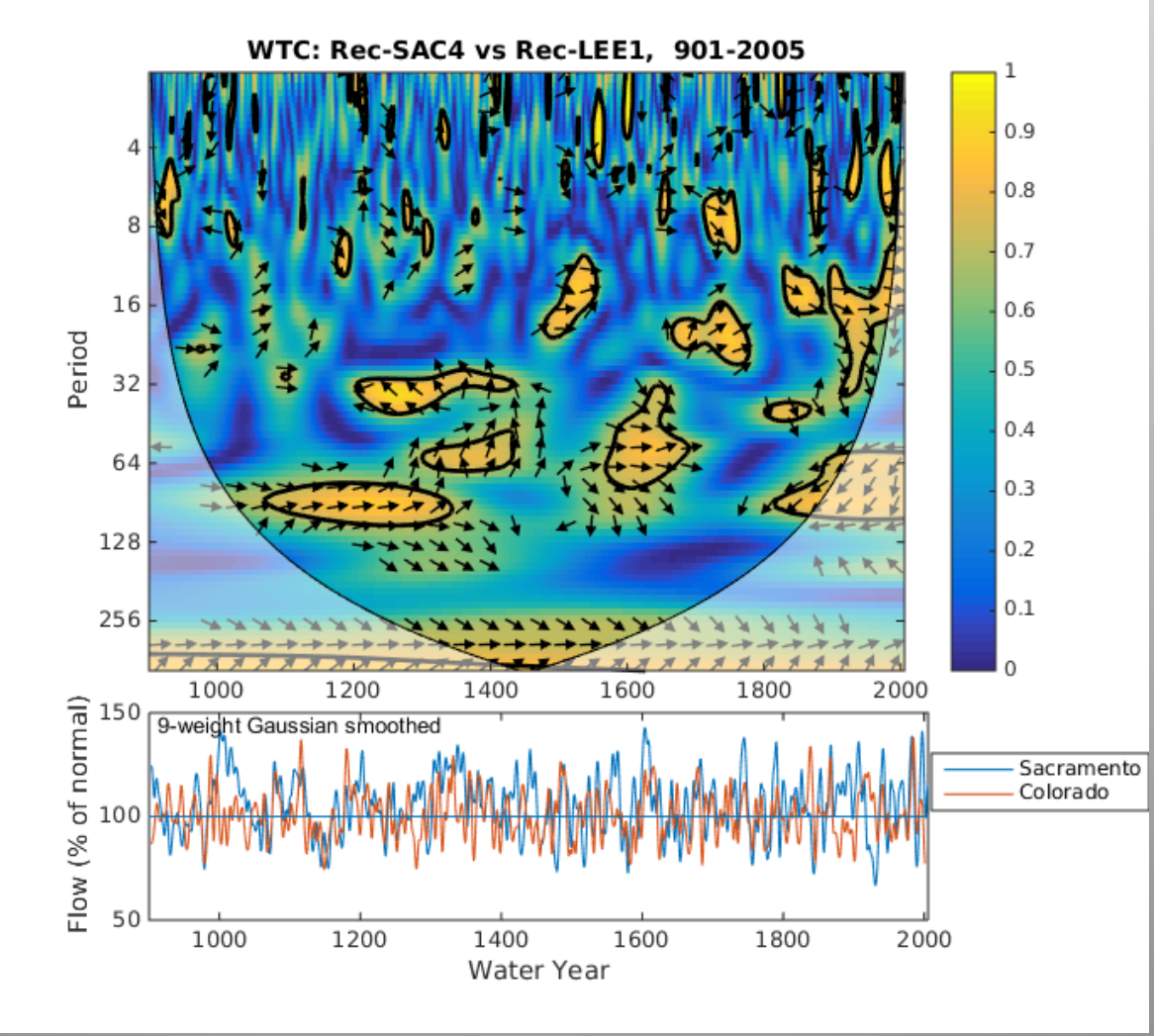


From Malte Meinshausen

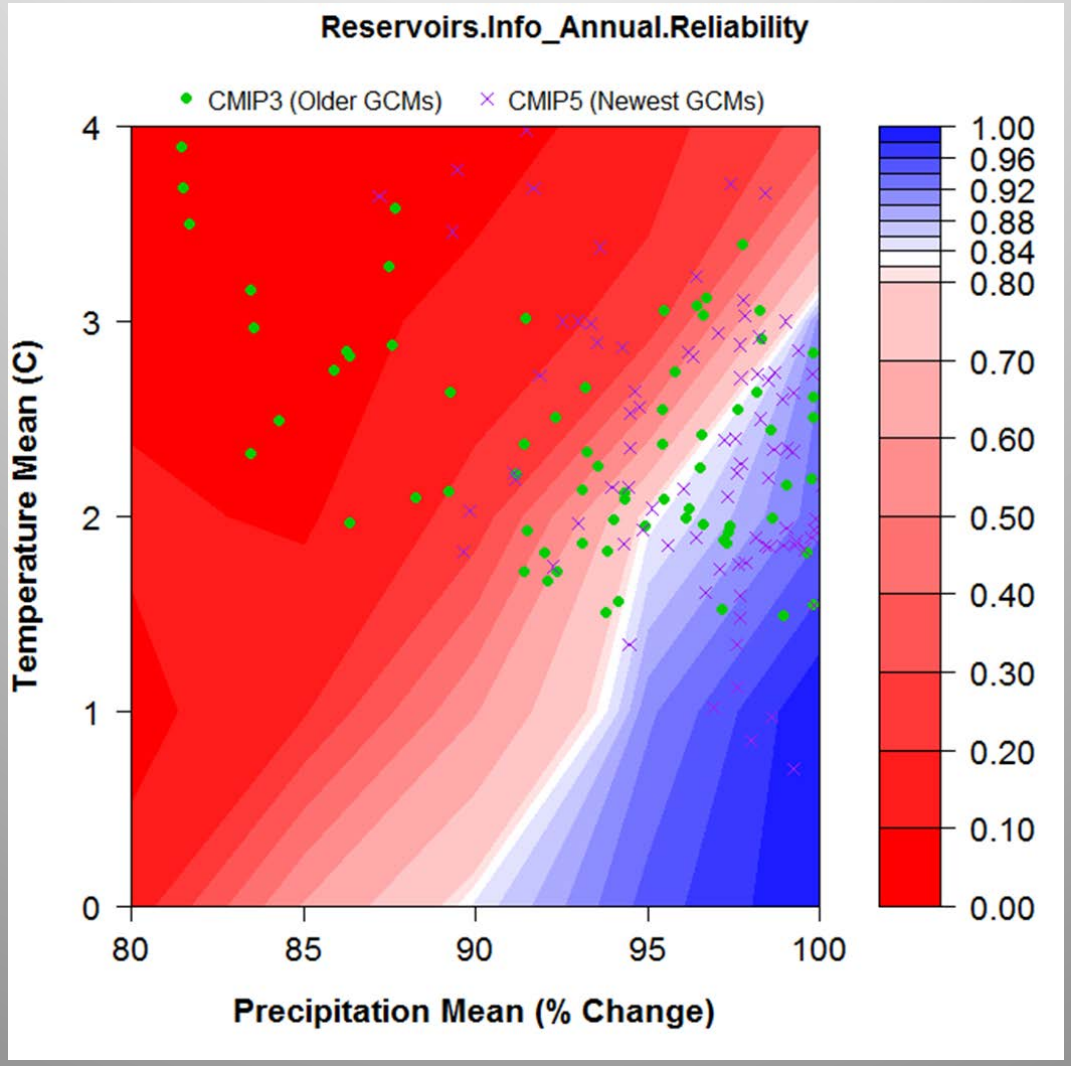
ipcc INTERGOVERNMENTAL PANEL ON climate change

WMO UNEP

Addition Chapter 5 Guidance: No Name Oscillation



Addition Chapter 5 Guidance: Decision Scaling



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THANK YOU!

Next group call:

January 16th , February 20th

Next Full CCTAG March(TBD)